REMARKS

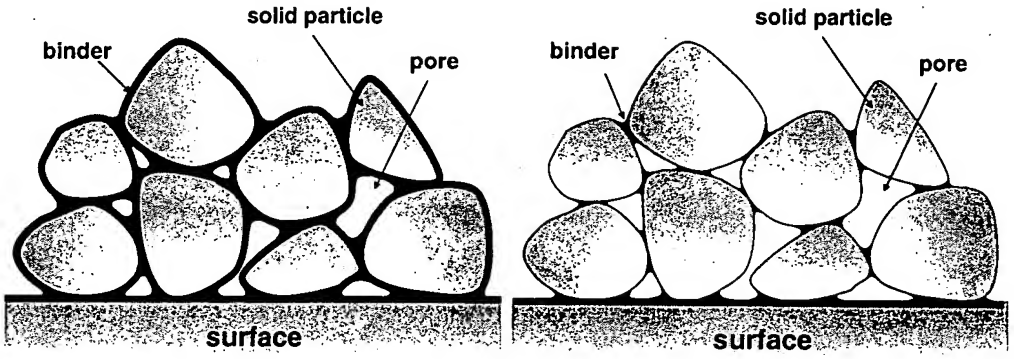
The present invention and the cited invention are different in the following point:

- Obtaining hydrophilic porous structure

In the cited invention, a porous structure is obtained by bonding inorganic compounds having hydrophilicity using a binder (refer to col. 2, lines 60-63; col. 3, lines 13-14, 40-41 and 47-49). However, in the present invention, a hydrophilic porous structure is obtained by bonding solid micro-particles using a hydrophilic binder, regardless of whether the solid particles are hydrophilic or hydrophobic.

Under the circumstances, the diffrences between the two inventions lies in whether the hydrophilicity is caused by the surface characteristics of solid particles or the characteristics of a binder. At first glance, this difference seems to be trivial, but it is significant from the point of view of practicality.

In the case where solid particles are hydrophilic but a binder is not hydrophilic, when the whole surface of each solid particle is covered with a binder, as illustrated in FIG. (a), the surface loses hydrophilic properties, and thus, a hydrophilic porous structure cannot be realized (col. 3, lines 23-25). In this case, the amount of binder should be apprropriately set to that required only to bond the solid particles without wholly covering the surfaces of the particles with the binder, as illustrated in FIG. (b) (col. 3, lines 25-28, 47-49).



(a) (b)

However, since solid particles are hydrophilic and a binder is water-soluble in the cited invention (col. 3, lines 49-54 and 63-64), the binder is inclined to wet the surfaces of the solid particles very quickly, and therefore, the surfaces of the solid particles are highly likely to be covered with the binder in the coating process. For this reason, in order to obtain the coating structure illustrated in FIG. (b), the amount of binder should be very small.

However, since it is difficult to enhance the bonding force of the solid particles in this case, there is the likelihood that the solid particles will separate from each other or completely fall away from the surface, thereby causing a problem of low durability. Moreover, when a heat exchanger is processed using a surface pretreated material, the

coating is peeled away from the surface in the course of processing, thereby causing a problem in that the surface characteristics cannot be retained.

In the cited invention, since solid particles that have small volumes relative to the area of the bonding portion thereof, that is, very small particles, are necessary for maintaining the bonding force of the solid particles, the size of the solid particles to which the cited invention can be applied is limited to 14 μm (col. 3, lines 32-35). In this case, the size of pores between solid particles is not larger than 10 μm, whereby the permeability becomes very small although the capillary force is very large, and thus, the surface wettability is sensitively affected by the degree of contamination. In addition, since the porous structure is highly likely to be filled due to contamination of or deposition in pores, there is difficulty in the application of the cited invention to general environments, with the exception of very clean environments.

However, in the present invention, the hydrophilicity increases as the solid particles are completely covered with the binder as illustrated in FIG. (a), and at the same time the bonding force increases, thereby avoiding the problem of the cited invention. Accordingly, the surface treatment effect is not degraded in the course of processing, even though the heat exchanger is fabricated by processing the surface pretreated material.

In addition, the present invention can be applied when the size of solid particles is in the range of 20 to 70 μm by controlling the amount of binder. Accordingly, degradation in performance due to contamination can be overcome by changing the size of solid particles depending on the environment in which the heat exchanger is used.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 08-0750, under Order No. 9242-000029/US from which the undersigned is authorized to draw.

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Respectfully submitted,

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